WHAT IS CLAIMED IS:

1. An apparatus for spin-coating a semiconductor substrate, comprising:

(a) a rotary table rotatable in opposite directions;

(b) a nozzle dropping coating material onto a semiconductor substrate lying on said rotary table;

(c) an electrode having a ring-shaped cross-section and disposed around said rotary table; and

(d) a power source applying a voltage to said electrode, said voltage having an electric polarity opposite to an electric polarity of said coating material.

2. The apparatus as set forth in claim 1, wherein said power source applies a voltage to said electrode, said voltage changing its level periodically with the lapse of time.

3. The apparatus as set forth in claim 1, wherein said electrode is rotatable about a rotation axis of said rotary table.

4. The apparatus as set forth in claim 1, wherein said electrode is able to raise and lower relative to said rotary table.

5. The apparatus as set forth in claim 1, further comprising a second electrode embedded in said rotary table.

6. The apparatus as set forth in claim 1, wherein said power source applies such a voltage to said electrode that a force applied to said coating material by an electric field generated by said electrode is almost equal to a gravitational force exerted on said coating material.

7. An apparatus for spin-coating a semiconductor substrate, comprising:

(a) a rotary table rotatable in opposite directions;

(b) a nozzle dropping coating material onto a semiconductor substrate lying on said rotary table;

(c) a plurality of circumferentially-split electrodes cooperating with one another to thereby form an electrode having a ring-shaped cross-section and disposed around said rotary table; and

(d) a power source applying a voltage to said circumferentially-split electrodes, said voltage having an electric polarity opposite to an electric polarity of said coating material.

8. The apparatus as set forth in claim 7, wherein said power source is comprised of a plurality of second power sources each of which is associated with each of said circumferentially-split electrodes, each of said second power sources applying an independently controlled voltage to the associated circumferentially-split electrode.

9. The apparatus as set forth in claim 8, wherein each of said second power sources applies a voltage to the associated circumferentially-split electrode, said voltage changing its level periodically with the lapse of time.

10. The apparatus as set forth in claim 9, wherein said second power sources applying a voltage to said circumferentially-split electrodes situated facing each other, said voltage changing its level periodically with the lapse of time.

11. The apparatus as set forth in claim 7, wherein said electrode is rotatable about a rotation axis of said rotary table.

12. The apparatus as set forth in claim 7, wherein said electrode is able to

raise and lower relative to said rotary table.

13. The apparatus as set forth in claim 7, further comprising a second electrode embedded in said rotary table.

14. The apparatus as set forth in claim 7, wherein said power source applies such a voltage to said electrode that a force applied to said coating material by an electric field generated by said electrode is almost equal to a gravitational force exerted on said coating material.

15. An apparatus for spin-coating a semiconductor substrate, comprising:

(a) a rotary table rotatable in opposite directions;

(b) a nozzle dropping coating material onto a semiconductor substrate lying on said rotary table;

(c) a plurality of vertically-vertically-split electrodes cooperating with one another to thereby form an electrode having a ring-shaped cross-section and disposed around said rotary table; and

(d) a power source applying a voltage to said vertically-split electrodes, said voltage having an electric polarity opposite to an electric polarity of said coating material.

16. The apparatus as set forth in claim 15, wherein said power source is comprised of a plurality of second power sources each of which is associated with each of said vertically-split electrodes, each of said second power sources applying an independently controlled voltage to the associated vertically-split electrode.

17. The apparatus as set forth in claim 16, wherein each of said second power sources applies a voltage to the associated vertically-split electrode, said voltage changing its level periodically with the lapse of time.

18. The apparatus as set forth in claim 15, wherein said electrode is rotatable about a rotation axis of said rotary table.

19. The apparatus as set forth in claim 15, wherein said electrode is able to raise and lower relative to said rotary table.

20. The apparatus as set forth in claim 15, further comprising a second electrode embedded in said rotary table.

21. The apparatus as set forth in claim 15, wherein said power source applies such a voltage to said electrode that a force applied to said coating material by an electric field generated by said electrode is almost equal to a gravitational force exerted on said coating material.

22. A method of spin-coating a semiconductor substrate, comprising the steps of:

(a) dropping coating material onto a semiconductor substrate;

(b) rotating said semiconductor substrate about a center thereof; and

(c) generating an electric field around said semiconductor substrate, said electric field having an electric polarity opposite to an electric polarity of said coating material.

23. The method as set forth in claim 22, further comprising the step of locally varying an intensity of said electric field circumferentially of said semiconductor substrate.

24. The method as set forth in claim 23, wherein an intensity of said electric field is varied in regions of said semiconductor substrate circumferentially facing each other.

25. The method as set forth in claim 22, further comprising the step of locally varying an intensity of said electric field vertically of said semiconductor substrate.

26. The method as set forth in claim 22, further comprising the step of varying an intensity of said electric field periodically with lapse of time.

27. The method as set forth in claim 22, further comprising the step of generating a second electric field below said semiconductor substrate by a voltage having an electric polarity opposite to an electric polarity of said coating material.

28. The method as set forth in claim 22, wherein a force applied to said coating material by said electric field is almost equal to a gravitational force exerted on said coating material.